

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A method for estimating a value of a diffusion tensor, said method comprising:

obtaining, from a plurality of test subjects, DT-MRI data from which an initial estimate of the tensor can be derived;

determining a first value indicative of intra-subject variation[s] in said data;

determining a second value indicative of inter-subject variation in said data; and

at least in part on the basis of said first and second values, determining a subject-specific additive offset for adjusting said DT-MRI data.
2. **(Original)** The method of claim 1, further comprising generating adjusted data by adjusting said DT-MRI data by said offset.
3. **(Original)** The method of claim 2, further comprising generating a bowtie plot from said adjusted data.
4. **(Original)** The method of claim 1, further comprising selecting said DT-MRI data to represent an initial estimate of said diffusion tensor value.
5. **(Original)** The method of claim 1, further comprising selecting said DT-MRI data to represent echo data from which an initial estimate of the diffusion tensor can be derived.

6. **(Original)** The method of claim 1, wherein determining a first value comprises determining an average intra-subject variance.
7. **(Original)** The method of claim 1, wherein determining a second value comprises determining an inter-subject variance.
8. **(Currently Amended)** A computer-readable medium having encoded thereon software for estimating a value of a diffusion tensor, said software comprising instructions for:
 - obtaining, from a plurality of test subjects, DT-MRI data from which an initial estimate of the tensor can be derived;
 - determining a first value indicative of intra-subject variation[s] in said data;
 - determining a second value indicative of inter-subject variation in said data; and
 - at least in part on the basis of said first and second values, determining a subject-specific additive offset for adjusting said DT-MRI data.
9. **(Original)** The computer-readable medium of claim 8, wherein the software further comprises instructions for generating adjusted data by adjusting said DT-MRI data by said offset.
10. **(Original)** The computer-readable medium of claim 9, wherein the software further comprises instructions for generating a bowtie plot from said adjusted data.
11. **(Original)** The computer-readable medium of claim 8, wherein the software further comprises instructions for selecting said DT-MRI data to represent an initial estimate of said diffusion tensor value.
12. **(Original)** The computer-readable medium of claim 8, wherein the software further comprises instructions for selecting said DT-MRI data to represent echo data from which an initial estimate of the diffusion tensor can be derived.

13. **(Original)** The computer-readable medium of claim 8, wherein the instructions for determining a first value comprise instructions for determining an average intra-subject variance.
14. **(Original)** The computer-readable medium of claim 8, wherein the instructions for determining a second value comprise instructions for determining an inter-subject variance.
15. **(Currently Amended)** A system for estimating a value of a diffusion tensor, said system comprising:
 - an MRI machine;
 - a processor in data communication with the MRI machine;
 - a computer-readable medium in data communication with the processor, the computer-readable medium having encoded thereon software ~~[as recited in claim 9.]~~ for estimating a value of a diffusion tensor, said software comprising instructions for:
 - obtaining, from a plurality of test subjects, DT-MRI data from which an initial estimate of the tensor can be derived;
 - determining a first value indicative of intra-subject variation in said data;
 - determining a second value indicative of inter-subject variation in said data; and
 - at least in part on the basis of said first and second values, determining a subject-specific additive offset for adjusting said DT-MRI data.